PRINTING EQUIPMENT ENGINEER

Edited for those concerned with the use and care of Printing Equipment

DECEMBER 1931

Vogue Light & Bold
•
Vogue Ex. Bd. & Oblique
•
Garamond & Italic
•
Garamond Bold & Italic
•
Bodoni & Italic
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Bodoni Book & Italic
•
Bodoni Modern & Italic
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Baskerville & Italic
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Cheltonian & Italic
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Chelt. Bold & Italic
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Cheltonian Bold Cond.
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Chelt. Bold Cond. Italic
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Caslon & Italic
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Caslon Bold & Italic
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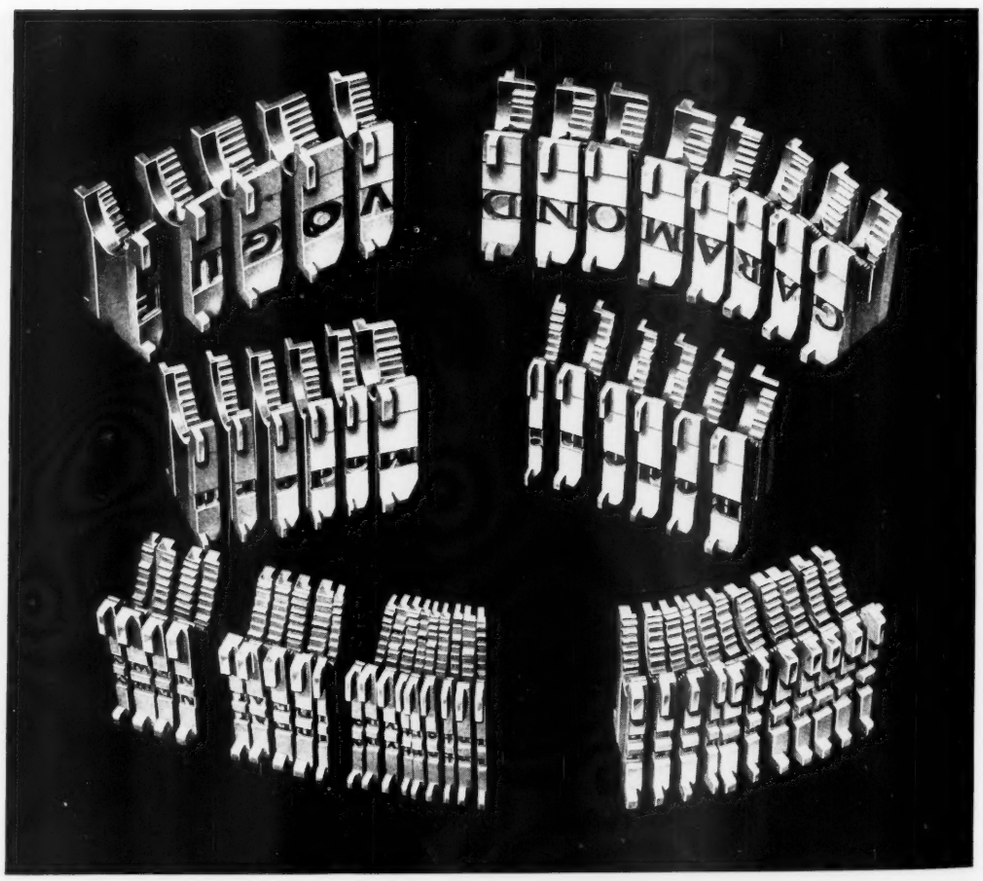

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PRINTING
EQUIPMENT
ENGINEER
December, 1931

The McKee Process Explained

By E. L. Travers*

The McKee Process is a method of treating plates to be printed on a rotary press, four colors at the same time. All the make-ready practical is put in the electrotype plate. The highlights and shadows are taken care of by the varying heights of the plate on each. The plates are treated or processed while flat. A reverse overlay is cut (solids thrown away and highlights built up). The reverse overlay is registered on the face of the electrotype, and both are placed on the bed of a special type shaving machine having a series of "barrelled" rollers with a spring tension of 70 lbs. on each roller. This forces the plate into contact with the overlay underneath, especially where the solid parts of the overlay have been cut away, thus leaving a corresponding proportionate *thickness* of metal under the solids. Where the highlights have been built up in the overlay, a corresponding proportionate *thinness* takes place in the plate, producing plane levels on the face of the plate corresponding to the lightness and darkness of the shades of the picture.

After the first shaving, with the reverse overlay still fastened to the face of the plate in register by means of two small tacks, and the true overlay on the back of the plate, it is placed on a tray having bearers on two ends, slid into a hydraulic press which has been heated previously to approximately 460 deg., and left there for a few minutes. Pressure is then applied (the amount depending on the size of the plate) until the top platen of the hydraulic press rests on the bearers of the tray. It is then withdrawn and placed in a cooling machine.

The plates are then curved with the overlays still in position, to fit the plate cylinder. On these plates the waste metal is not routed until after the plate is curved. There is an equal stretch in all four-colors when curved so that perfect register is obtained. Little or no make-ready is used on the impression cylinder, as all colors take their impression on the same area on the packed cylinder. A hard packing is used.

Printing all four colors in one operation produces perfect register, and the work can be turned out at the rate of 3,000 finished four-color impressions per hour.

Four-color wet printing, usually called the McKee Process, formerly had to be slipsheeted to prevent offset, but now the sheets are sprayed with paraffin as they leave the cylinder. The inks used are highly concentrated, the minimum amount having the maximum strength, effecting a saving of 33 1/3 per cent. They vary in consistency, as they have to be superimposed wet one upon the other. The first color is quite stiff, with those following being softened until the last is quite soft. The usual rotation of color is yellow, red, blue and black.

It is claimed that pliable composition rollers produce the most satisfactory results on this class of work. At one time cloth-covered distributing rollers were used for grinding the ink but these have been superseded by the regular composition roller. There is a composition roller with a special craft covering that gives longer service on these presses than any other rollers. Some of the most beautiful subjects today are printed wet in one operation. While frequently referred to as McKee presses, there are no McKee presses. The McKee Process is used on Rotary Multicolor Presses.

*The National Association of Printers' Roller Manufacturers, Inc., New York, N. Y.

Skill

By William Feather

The skill of workmen who follow the different crafts thrills me when I watch them closely. When this office was redecorated I observed the carpenters, plumbers, steamfitters, carpet-layers, and painters. Their motions were so graceful that their work seemed effortless. Perhaps that is why some people think that workmen are loafers. The good workman doesn't sweat when he works. The clumsy one heaves and groans and makes a heavy task of what the workman with trained muscles does without an audible sigh.

A first-class workman is almost catlike. At his specialty he is all grace. Off the job and in a strange environment, or performing an unaccustomed task, such as writing a letter, he often appears crude and stiff. But those who smile at such efforts should try to compete with him in his regular work.

Autopaster Replaces and Splices Rolls

An important invention in relation to the development of the modern web printing press which will provide for maximum operating production, make for better typographical appearance and reduce the number of paper breaks, was recently announced by Henry A. Wise Wood, president of the Wood Newspaper Machinery Corporation, New York.

The newly-perfected invention which has been named the Autopaster, makes it possible to work presses continuously at top speed, from the beginning to the end of a run, without slackening their pace for paper replenishment.

The Wood Autopaster automatically replaces an expiring butt with a fresh roll of paper. It likewise ejects automatically all spliced copies, so that they do not appear among the salable papers. Thus the actual production of a press equals in salable copies its full running speed, less only the spliced copies, six of which are ejected each time the Autopaster supplies a new roll to the press.

One of the Autopasters has been in operation at the Brooklyn plant of the New York *Times* for some time. Several million copies of the *Times* have been run through the unit fed by the Autopaster. The Autopaster is being applied to other units of the *Times* plant. It is also being installed on all new Wood presses and is going out to all Wood presses now in use.

Mr. Wood said that the average increase in efficiency for each roll of newsprint used by the press will be about 10 per cent. He predicted that the efficiency of the *Times* plant, when all the press units are equipped with the Autopaster, would be increased by between 30 and 45 per cent.

The faster the operating speed of the press, the more production is obtained by use of the device. Mr. Wood said a three-roll press operating at a speed of 50,000 papers an hour gains 29 per cent in production, and the percentage gradually increases with the number of rolls used in the press. On a seven-roll press operating at the same speed the production gained is 67 per cent. Operating at 55,000 an hour a three-roll press increases its production by 33 per cent, a seven-roll press by 77 per cent. These figures are based on trial runs.

The fact is that with an Autopaster the running speed of a press becomes its producing speed, whatever that running speed may be, less only six copies for each new roll inserted. These contain splices and are ejected from the delivery.

Recently, for instance, *The Times* ran an 8-page section upon the unit to which is attached the Autopaster. This section, which was run at 48,000 an hour, actually averaged, notwithstanding the necessary replenishment of paper rolls, a net production of 48,000 copies an hour, less six copies for each new roll supplied.

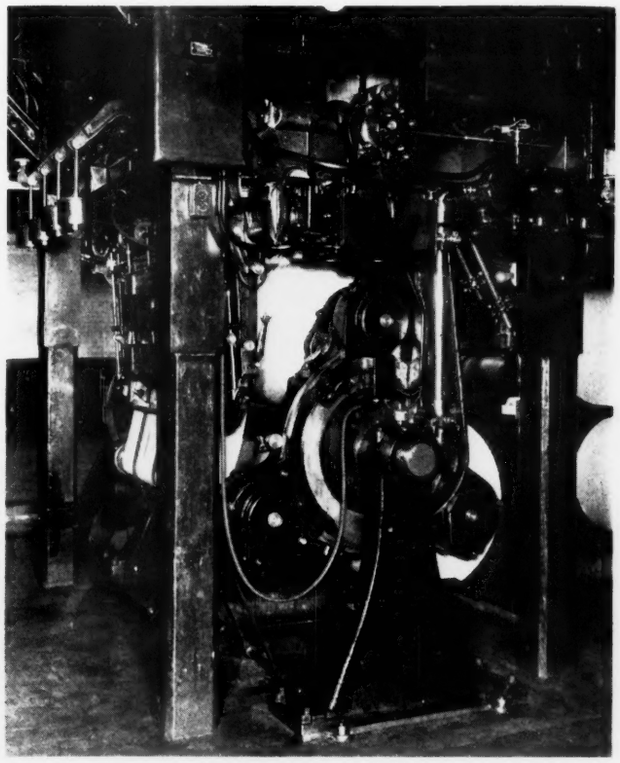
The operation and construction of the heart of the device, which is called an "electric brain," has not been explained by Mr. Wood. The "electric brain" (the motivating power of the Autopaster) is a small and compact mechanism which operates other mechanisms in chronological order at the proper instant.

Mr. Wood, in explaining the capabilities and operation of his device said: "One of the limitations of the modern press has been the fact that as each roll of paper was expended the press had to be slowed down in speed in order that the empty spool might be removed and a fresh roll of paper inserted in its place.

"The modern printing press combines in making each copy

Henry A. Wise Wood, Inventor of the Autopaster, in which mechanism, it is asserted, 47 of his inventions have been embodied. The original sketch for this device was crudely drawn with a pencil by Mr. Wood on the margin of a newspaper while he was riding home on a train in 1896. The idea, however, had to wait for developments in the then infant science of electrical engineering.

of a newspaper four, five, six or seven rolls of paper, and the daily operating speed of the Wood press is 50,000 papers an hour. For a fifty-two-page paper, such as the New York *Times* often prints, four rolls of paper are required. As each roll of paper is about 10,000 newspaper page lengths long and as no two rolls ever run down at the same time, a modern



This is the Autopaster which automatically replaces and splices rolls of paper. The use of the Autopaster will not be confined to the newspaper field since it is readily applicable to magazine and catalog presses. Mr. Wood has stated that, because of its universal importance, the Autopaster should be thrown open to the printing field.

newspaper press is never run continuously at rated speed, but is slowed down on an average of every three minutes for the insertion of a new roll of paper. The leading edge of the new roll is pasted by workmen to the expiring roll of the almost empty spool while the press is barely turning over. Thus the speed of the modern press, plotted graphically would appear very much like the blade of a saw dropping suddenly from maximum speed to almost zero revolutions and then abruptly increasing again. These fluctuations in speed not only limit the actual production of the press so that a machine capable at full speed of producing 50,000 papers seldom produces more than 30,000, but they depreciate the typographical quality of the newspaper, because a newspaper to be well printed must be printed at a uniform speed, since the amount of ink, the depth of the impression of the type and the mechanical efficiency of the folding machine all vary as the speed of a press varies.

According to a story appearing in the New York *Times*, the primary unit of the Autopaster is two sets of spiders, placed opposite each other in the same plane. Each spider has three arms, each arm radiating 120 deg. apart from a central hub and the end of each arm is designed to hold one end of a spool of newsprint paper. Thus the rolls of paper are suspended between the two parallel arms of the two spiders.

The workman places a roll of newsprint in place between two of these arms and cuts the leading edge of the paper into the shape of a capital "W" with the points down, and then secures each of the two points to the main part of the paper roll by a small perforated tab to prevent the points from being lifted by the wind as the roll is rotating. Then the workman daubs paste made of the same adhesive preparation that is used on a sheet of fly paper along the upper surface of the W-shaped edge of the paper, and all the manual labor in connection with the preparation of a fresh roll is complete. The workman presses an electric switch button and leaves the Autopaster to itself.

When the button is pressed, the "electric brain" takes charge, and the fresh, prepared roll of paper, is rotated at the proper time, around the hub of the spider into such a position that the surface of the fresh roll is ¾ in. from the roll of paper which is being fed into the press. At the same time the "brain" orders motion and the fresh roll starts to rotate in the same direction and at the same speed (½ mi. per min.) as the expiring spool. When the thickness of the roll of paper remaining on the expiring spool reaches ¼ in. a steel finger, actuated by a spring mechanism, slips off the revolving edge and closes an electrical contact. This contact telegraphs to the "brain" that the time for another order has come; the "brain" acts, and a stiff brush, as wide as the web of moving paper, which is set in back of the moving web and exactly opposite the center of the revolving fresh roll goes into action. The brush moves toward the fresh roll and by its movement presses the moving web of paper from the expiring roll against the paste-covered edge of the new roll. The sticky paste holds the leading edge of the paper on the fresh spool to the moving web from the old roll, breaking the little tabs that held the edge to the main part of the new roll, and the old web and the new web go on together moving at full speed through the press. As soon as this contact has been made, the "brain" issues another order, and a saw-toothed knife placed below the brush and in back of the old web cuts the web from the expiring spool. Thus, the old web has automatically picked up the new web and carried it through the press without any diminution of speed.

The process of splicing the new and the old webs and the cutting of the old web leaves a tail about six pages long, which is carried into the press and folded up in the particular newspapers of which it is a part. The "electrical brain" notifies the folding apparatus at the end of the press that six newspapers containing the splice and parts of its "tail" are coming along, and the folder automatically ejects these defective copies so that they shall not be sent out as perfect papers. In the final step, the "brain" notifies the spider to make one-third of a revolution, which the fresh roll now supplying its paper to the press, into normal operating position, and brings the empty spool, now idle, into discharging position.

"Thus the modern newspaper printing press, which was brought into being under the auspices of John Walter in the office of the London *Times* in 1868 and 1870, has been completed under the encouragement of Mr. Ochs in the offices of The New York *Times* in 1931," Mr. Wood concluded.

Promotions by Harris-Seybold-Potter

J. L. Bluemer has been promoted to salesman by the Harris-Seybold-Potter Company. Mr. Bluemer will sell the entire Harris and Potter line of presses—offset, typographic and gravure. He will work under the direction of William Guy Martin, central west district sales manager. Bluemer has had 13 years of service with the Harris-Seybold-Potter Company.

George L. Weiss succeeds Mr. Bluemer as central west district service manager.

Edward J. Volz—Constructive Leader

By FREDERICK F. UHL

Edward J. Volz, President of the International Photo-Engravers' Union. Some of the Details of His Career Are Presented in a Biographical Sketch.

ABLE leadership in a labor organization is best attested by continued re-election to office over a period of years. Continued promotion from local offices of responsibility to international office of greater responsibility means nothing more nor less than merited reward for services well performed. Leading the International Photo-Engravers' Union membership forward under a progressive plan of action looking toward the advancement of both employer and employe is a worthy motive which will help that industry to maintain itself on a high plane.

The subject of this sketch, Edward J. Volz, president of the International Photo-Engravers' Union of North America, was born in Cincinnati, O., August 22, 1879.

At the early age of 14 years he was apprenticed to the wood engraving trade with the F. C. H. Manns Company of Cincinnati, but before he had completed his apprenticeship as a wood engraver, he was indentured to photo-engraving with the same concern. After completing his apprenticeship he was elected a journeyman member of Cincinnati Photo-Engravers' Union No. 13. He later transferred to Cleveland, Buffalo, Minneapolis and St. Paul and finally located in New York City.

In 1911, Mr. Volz was elected first vice president of New York Photo-Engravers' Union No. 1 and served in that capacity until 1916 when he was elected to the office of president, which office he held continuously until 1929. He was then elected president of the International organization. He was also a vice president of the International body, having been elected to that office in 1922 and serving until elected president.

During the time Mr. Volz was president of the New York union he introduced the evening classes for apprentice training, conducted with and under the supervision of the Board of Education of the City of New York, Photo-Engravers' Board of Trade of New York, Inc., and the New York local union. Attendance at these classes is compulsory for all of the registered and advanced apprentices for the full five-year term of their apprenticeship. The apprentice must attend two evening classes each week during his school term. The classes now have a combined enrollment of approximately 300 apprentices who are instructed in free-hand drawing, color, optics, physics, chemistry, advanced chemistry as applied to photography and practical photo-engraving by all processes. These classes were under the direct supervision of Mr. Volz for about eight years and he considers them his most progressive and outstanding work during the time he served as president of the New York Union.

Periodical sanitary inspection of photo-engraving shops and the physical examination of all workers, (innovations of his) have resulted to bring about improved hygienic conditions in the plants, a higher physical standard among the workers and a consequent higher standard of output, both in regard to quality and quantity of production.

He is co-author with Amos Spaulding, another member of the New York local, of pamphlets on "Rotogravure and Photogravure," also "Photo Offset Processes," which were published and distributed to further interest members in these processes.

During his tenure of office the membership of the local union has increased from 1350 to 2550 journeymen members.

Funds increased during the same period from $14,000 to over $200,000, and a system of unemployment benefits was inaugurated, as well as a voluntary system of group insurance covering the great majority of the membership.

Mr. Volz was elected first vice president of the International Photo-Engravers' Union in August, 1922, and president in January, 1929, and has been selected to serve in that capacity at every convention since 1929.

As an international officer he has introduced better apprentice regulation and simplified branch divisions, a service bureau for the dissemination of technical and practical information in regard to the various photo-engraving processes

Continued on page 23

An Ambitious Program

The International Photo-Engravers' Union, through the leadership of President Volz, is sponsoring a program of future activity which is as follows:

Closer cooperation between employer and employe in the photo-engraving industry.

Amalgamation of all workers and all processes in graphic plate-making industry.

Expansion and improvement of apprentice training and school classes.

Establishment of research and experimental bureau.

Accumulation of more accurate knowledge of cost of production.

Closer affiliation and understanding with other printing trades.

Establishment of more friendly relations and close coordination between those associated with the advertising, printing and publishing business.

Plastic Printing Inks for Rapid Drying

By M. E. Hanson*

(Concluded from Last Month)

The ozone generators consume very little power and are well worked out but are very expensive, both as to first cost and upkeep. The apparatus for applying cooled ozone to the heated inked surface, though fairly well worked out, is complicated and seriously fills up the all-to-little press space.

Three or four manufacturers have developed varnish vehicles of this general character for all colors, advertising them as heat and ozone reactive inks. Printing with them and using heat and ozone as high as 60 impressions per minute have been obtained, the ink drying in about two seconds, being dry before it reached the folding devices. It probably will be possible to greatly increase the number of impressions per minute but there always will be that intransmutable time element present while the ink is absorbing oxygen and consequently considerable more space and length of web will be required between the first impressions and those on the reverse side of the folder. Too, it has been found that heat and ozone can readily be buried in the stack when no folder is used by applying heat and ozone in more moderate forms to the surface of the running sheet. Drying is sufficient to set the ink enough so that no slip sheets are required, the whole stack being dry in a few minutes. With the ordinary inks employing no heat or ozone, the drying time was 8 to 10 hours and slip sheets were required.

It is clear that an ink capable of drying into a hard film without necessarily absorbing any oxygen is most desirable. Thus we develop a general characteristic for a plastic ink, namely one that will not dry in a thin film exposed to room air at 80° F. for several hours, as it might be spread upon rolls or plates, but merely at a touch of heat after being printed upon the paper dries almost instantly.

We find many plastic substances which dry or harden with little or no absorption of oxygen. Their hardening takes place when heat is applied to evaporate the thinners or solvents used when compounding the constituent elements. When we make measurements of the heat required for drying we find that more heat had to be used than is theoretically necessary to drive off or evaporate the known weight of solvents present. Why is this extra heat required? Delving more into theory, we find two probable reactions taking place which employ this extra heat as the motive force. One reaction is that when the solvent leaves the plastic substances, molecules of the solvent have to be torn away from molecules of plastic, and as there is an electrical attraction between them, energy is required to accomplish the separation. This leaves the molecules of plastic with an unsatisfied electrical charge. As the solvent thins out, molecules of the plastic substances come closer together. As they become packed sufficiently close the unsatisfied electrical charges, some negative or lower in potentiality to the positive charges of others, cause a natural selection of opposite electrical attraction between the plastic molecules. An entirely new arrangement takes place. If it were not for friction of some sort the transition would take place with the speed of an electrical discharge or the speed of light. The second employment for the extra heat is to aid the electrical attraction to overcome this friction more speedily. Thus we have reactions entering into the drying and hardening of a plastic film that naturally take place quickly.

One thing we must learn to do is to control these reactions in various ways. This may be done by varying chemical mixtures used, choice of different solvents, use of mordants, measure and degree of plasticising, etc., to get the right degree of "tack," the right viscous body, the right mechanical balance between different colors, all according to different printers' specifications. This control must be simply worked out to meet ready and accurate use in the ink room.

The solvents available have different boiling points ranging through a broad scale, but unfortunately for this problem their vapor pressure curves are nearly parallel. If we choose one from the group with a boiling point well under 250° F., the highest practical heat to apply to a printed sheet, we find that at room temperature its vapor pressure is still so great that drying will progress rapidly. On the other hand, if one is selected with a vapor pressure so low at room temperature that little drying takes place, at 200° to 250° F., we find the boiling point hardly attained or not even reached.

If we could only flatten the curve of a high boiling solvent with a vapor pressure of 1 in. of mercury or less at 80° down to a point where at 30 in. the boiling temperature would be reduced to only 150° or so it would not take us long to compound an ink to meet the general characteristics for a plastic ink set forth above.

Our problem becomes one to get the effect by indirect means. There is little obtainable information as to the sums of the partial pressures of mixtures of two or more solvents but it is certain that they do not closely follow direct proportional rules and some very odd results obtain. The drying result can be further affected by the kind, number and method synthesizing the combination of plastic gums present, the degree to which they have been worked, milled or agitated, the amount and kind of solvents employed and the temperatures and pressures to which the whole or parts are subjected during process of manufacture. This opens up a none-too-well explored field of research. Further, there are mordants and also catalytic chemicals servicable to produce varying effects. Certain it is there are many combination which will produce a desirable ink vehicle where there are so many elements and combinations to draw from.

The general characteristic for a plastic ink vehicle develops into a preliminary specification as follows:

1. One not hardening on rolls, plates or in fountain at room temperature even if press is stopped for several hours.
2. One when heated on the printed sheet to not over 250° F. will harden or dry in a small fraction of a second.
3. One having no great amount of solvent present.
4. One thickening very slowly in fountains if at all.
5. One suitable for milling into it prescribed colors under ordinary ink room conditions.
6. One when even dry on plates on rolls may be washed off easily with a cheap and inoffensive solvent.
7. One presenting no increased fire hazard.
8. One, when as a vehicle, is nearly water white.
9. One capable of being furnished in several body weights or degrees of "tack."
10. One that will not deteriorate glue or soft rubber inking rolls.
11. One capable of long storage in the can without deterioration.
12. One drying with a good body and brilliancy.

Little interest has been shown in plastic inks until the last twelve months. Since then a great deal has been done. Previous to that time samples have been made or formulas suggested by one chemist or another for fast-drying ink plastics.

Continued on page 25

*Mechanical and Chemical Engineer, Collingswood, N. J. Member American Society of Mechanical Engineers.

Dry Mat Manipulation

By Dry Mat Bill

Last month we discussed the dry mat and its care. This month we will take up the moulding of dry mats which will include the preparation of the form, moulding machines and their care, cushion, etc. It may be realized readily that this is a big undertaking and enters a field where a great variety of opinions predominate, so the writer will present his observations for what they may be worth.

THE TYPE FORM

Many differences of opinion arise between those responsible in the composing and stereotype departments as to the condition of the form when delivered to the stereotyper.

The writer will remain neutral to a certain extent and leave that matter up to the one in charge of mechanical operations of the plant. To cover our subject, we will assume that the type form is delivered in a satisfactory condition, but while touching on this subject a few remarks may not be amiss in regard to the chase as it affects stereotyping.

The chase is often a neglected piece of equipment. It should be machined absolutely true, for if the chase is warped or the furniture used to lock up the form is bowed and does not lie flat it robs the type form of proper impression. This condition is so bad in some plants that the tension on the mat during the moulding process pulls the mould out of shape.

The stereotyper, in order to alleviate this trouble, cuts his moulding cushion down so that it just covers the type. This condition, of course, should not exist and should be corrected at once.

The form should be free of proofing ink and brushed free of the little metal fragments which sometimes drop from the product of the composing machines. The etchings should have all the burrs filed off and mounted on solid bases to prevent light and dark waves of color in the printing. Line rules should not be above type high to such an extent that they will cut the mat.

The form should be locked up firmly, yet not so much so as to cause a bowing either up or down of the type matter. Before locking up be sure to loosen the form and plane it down thoroughly.

Make certain there are no loose type because in moulding these will lift off their feet, resulting in loss of full printing surface.

UNDERLAYING HALFTONES

Now if the form has a combination of type and halftones or screened illustrations, care should be used to compensate for this solid area. The general practice in use is to underlay these halftones, raising them from 0.003 in. to 0.008 in. above type high.

This method of compensation serves its purpose to a great extent, but the particular stereotyper will overlay the mat instead with some firm matter such as tympan paper. The better results in printing will reward this extra care.

Underlaying the halftone has a tendency to stretch the mat to excess and if it is too close to a line rule will cause a concaving of the halftone, therefore in underlaying, the stereotyper should be governed by the type of cushion used, clearance of the roller above the form and area of the halftone.

UNDERLAYING AND BLANKETS

The stereotyper should take into consideration the type of blanket used on the presses when underlaying a cut. If the press is equipped with rubber blankets, do not underlay over 0.006 in. as this type of press blanket has very little resiliency and too much variation of the printing surface of the plates tends to shorten the life of the blanket.

GIVE DUE REGARD TO SCREEN DEPTH

Another thought in obtaining a clear print of the halftone is to secure some idea of the screen depth. Shallow-screened halftones should not be raised too high, one or two thicknesses of newsprint is ample as an underlay.

Actual tests show that an illustration which is exactly type high when moulded will be type high in the cast. When the halftone is raised as described it will actually be lower in the cast than the type face. This condition, you may readily appreciate, helps to avoid filling in.

AVOID EXCESSIVE PRESSURE

Care should also be taken to see that proper moulding conditions are present so as to avoid the danger of crushing the stipple of the screen in halftones with excessive pressure. Excess pressure flattens the printing surface of the dot and causes a darkening or thickening of the illustrations.

FILLING IN OPEN SPACES

When the forms contain deep spaces or open ads it is a good practice to fill in with pieces of linotype slugs to prevent abnormal stretch of the mat. This is particularly necessary where there are unprotected borders or column rules.

A very common cause of trouble in the use of dry mats is the existence of extremes in the grooves for bolsters and marginal clearances. These should be corrected in the chase. The stereotyper should not be expected to manipulate the mat to overcome this trouble.

Now that we have taken pains to see that the form is in proper condition for moulding, our next step is the mat.

CONDITION OF THE MAT

The condition of the dry mat for moulding is very important.

In the past various individual plants conditioned the mats after receiving them from the manufacturer.

All kinds of contraptions were used to moisten the mat (some vapor, some direct application of water by rollers, some sprayed and many other ways) none of which could be depended upon to give uniform condition day in and day out. This caused a great deal of trouble and quite a few plants gave up in disgust and returned to the use of wet mats.

The manufacturers, recognizing the necessity for proper conditioning of mats for best manipulation, arranged to furnish mill-conditioned mats and now, practically without exception, all dry mats come to the user ready for the moulding machine. Variations of moisture content are furnished in accordance with the shrinkage requirements of the individual plants.

Now, that the manufacturers have provided this service, it is up to the newspaper plants to provide the proper facilities to care for and maintain the proper moisture and condition of the mats. This is very important.

TREATMENT OF MATS AFTER RECEIPT

As a rule, the mats arrive in hermetically sealed bundles of 100. As long as the seal remains unbroken the mats will remain in the same condition as when shipped from the factory and will improve in moulding qualities. The factory goes to quite an expense to properly prepare these mats for you and care must be used to keep them in the same condition while they are being used.

Conditioned mats should be stored in a cool place if possible but in no case should they be exposed to extremes of heat, for the moisture may be driven from the mats and condense on the inside of the wrappings.

When a case of mats is opened, a bundle should be placed in an insulated, air-tight storage box conveniently placed alongside the moulding machine. It is best to leave the mats in the original wrapping and just cut the end along the bottom, about one inch back on both sides, then up to the top. This leaves a convenient flap that may be raised up to remove mats and then placed back in position when through for the day.

CONSTRUCTION OF STORAGE BOX

The storage box should open on the end only—not over the full area of the mat. Too large an opening lets all the moist air escape when the lid is raised and forces the dry hot air of the moulding room in when the lid is being closed.

Moisture in the storage box may be maintained by the use of damp blankets (not wet) but at no time should these be allowed to come in direct contact with the mats. It is a characteristic of dry mats that they will immediately start equalizing themselves to the humidity they are exposed to.

Conditioned mats should be left in the storage box until the form has been prepared for moulding for they lose their moisture very rapidly when exposed to the air. This can be proved readily by removing a mat from the box and laying it on a table. In a very few moments it can be seen to start curling at the edges and corners, indicating loss of moisture. Unfortunately, the loss of moisture is not uniform, so if this mat were now moulded, most likely trouble would be experienced.

CARELESS HANDLING CAUSES MOISTURE VARIATION

It may be well to understand that the characteristics of conditioned mats are such that all the mats in the same bundle will have the same identical moisture content and when there is any complaint of uneven shrinkage from mats in the same bundle you can be assured that this unevenness is due to handling. Somebody has been careless in keeping them in proper condition.

If mats should become too moist, it is better to slip-sheet them to reduce the moisture than to lay them out exposed to the air, as the reduction of moisture will be more uniform and can be controlled more easily.

CONDITIONS AFFECTING SHRINKAGE

While moisture is the main requisite for shrinkage, there are, in reality, several things and conditions which affect it.

In moulding a mat there is a stretch of $\frac{1}{8}$ in. to sometimes as much as $\frac{3}{8}$ in. The amount of stretch is governed largely by the area of the form and the cushion used. Also another factor is the amount of mat lost in the spaces.

Experiments show that a solid type or halftone page will not give the same shrinkage as an open page, although the mats used have exactly the same moisture content. Slow scorching will cause more shrinkage than a quick scorch. Binding of the mould in the scorcher will retard shrinkage. Variations in moulding cushions and moulding pressure have their effects, so you can readily realize that with the many manipulation conditions that can and do affect shrinkage no manufacturer can guarantee it.

You can now readily see that, while the manufacturers can and do guarantee moisture content of mill-conditioned mats to within a fraction of 1 per cent, it really should not be expected of them to predetermine the conditions under which they are to be used and guarantee uniform shrinkage also.

The arrangement and combinations of cushions used in moulding will be discussed in the next paper. This is a most important operation. Perhaps the equipment and actual moulding operation will be discussed, too, if time and space permit.

Baskerville Reproduced

The London Mercury, to encourage interest in printing and book designing, issued the November edition in the form of a special number illustrating these subjects. For the first time in the history of the paper, the text was set on the Linotype and printed direct from the slugs. Five different type faces were employed, for purposes of comparison.

One of the pages was set in a new Linotype reproduction of Baskerville type, and facing a page printed from a "fount" of actual type made by Baskerville in the 18th century. This "fount" was recently brought back to England by a Fleet Street printer who "discovered" it in France, where it had remained for nearly 200 years.

An Operator Writes of Machinists—and Operators

By MILO BENNETT*

Milo Bennett, Who Holds World Speed Records as a Line-Casting Machine Operator and Who Has Had a Successful Business Career, Relates Some of His Experiences While an Operator.

THE *editor of* PRINTING EQUIPMENT ENGINEER has asked me to write about some of my experiences as a linotype operator. I hesitated, for the reason that any operator who has been at the game thirty-three or more years and who has traveled much has had similar experiences. However, the younger operators who got into the game later on will, I believe, be interested in what I am about to write.

When I was eighteen years of age I was working in a job office. I had one more year to serve to complete my apprenticeship and was very anxious to get into a newspaper composing room, where I would have an opportunity to learn to operate a linotype machine.

David McAleese, who is now in San Francisco, was foreman of the old Toledo *Commercial*. I asked Dave for a job and he put me to work in the ad alley. Now that I was in a newspaper composing room, it seemed that I could not get a chance to touch a machine. Any time I looked at a keyboard or made an attempt to set a line the machinist would roar like a lion. It seemed to me that the machinist and the chairman of the composing room had made up their minds that I would always be an ad man.

In this office there was a very wonderful operator, Bert McCullagh. Bert is now with the Ludlow Company, traveling out of Chicago. When Bert was a young man I used to marvel at the manner in which his fingers moved over a keyboard, apparently without any effort. He set more type than any other operator in the office. I enjoyed watching him operate. After the "jig" was up I would occasionally set a line or two. In this way I learned the touch of the keyboard. Not being able to get a chance, however, to do any real practicing, I bought a diagram of the keyboard and practiced at home. Finally, I got a machinist to make a dummy keyboard. Occasionally I would watch Bert McCullagh operate and the next afternoon, at home, I would practice on the dummy keyboard. I wanted to be an operator like Bert McCullagh.

*President, Milo Bennett's School, Toledo, Ohio.

In time I finished my apprenticeship and made application to join the Typographical Union. Instead of the foreman throwing me out on the street, as so many of them had a habit of doing in those days, David McAleese told me he would give me 60 days on the machine, then I would have to get out.

The first two weeks on a linotype gave me many thrills. In my own opinion, I certainly was some operator. Everything I set the first night had to be reset. My fingers could glide over the keyboard and it was an easy matter to hang the elevator on 13 ems 7 point, but the office couldn't use my type. It was too dirty. The old-time operators laughed and kidded me and I became greatly embarrassed. I could set a title page for a book, a good letterhead or lock up a form, but I had never set any straight matter in my life and the proofs were horrible. The foreman realized I was up against it, but he was a sympathetic fellow. (I always will have a warm spot in my heart for David McAleese.) He told me to quiet down, because I could stay 60 days, no matter how dirty the proofs were. At the end of two weeks the proofs started to clear up. By the end of 60 days I could hang the elevator all night long, without becoming fatigued. In this same office were two noted operators. One was Walter Rosengarten, who is still living in Toledo, and the other operator was a man by the name of Vincent.

Years ago it was a great distinction to be a fast operator—and Vincent and Rosengarten were two of the best operators in this section. They became jealous of each other and decided to have a speed contest, which was all the rage in those days. Their machines were all tuned up and they started in, working off the hook the same as I. Of course, I was not in the contest. In fact, I was not even considered an operator. However, when "30" was in, Rosengarten had 50,000 ems, Vincent had 49,000 ems, and I had set 57,000 ems. You can imagine how I felt, a man of nineteen years, having set more type than either of the two fast and most experienced operators in the office.

The fact that I had set so much type in so short a time at the business swelled my head, made me feel chesty, so I quit and went to Detroit. I had three situations in Detroit in one week. Mr. Harris, who at that time was foreman of the *News-Tribune*, was fined $50 for having given me a position ahead of other subs.

As time passed, I worked on a great many papers and finally became a full-fledged operator. I am going to give you some of my experiences with linotype machinists. I was a great admirer of a good linotype machinist. In those days they were mighty scarce. I remember the first day I went to work at the Conway Brief and Record Company in Detroit. Mr. Larkins, one of the finest linotype machinists of his time, had charge of fifteen linotypes. He was a grand man, a good machinist and a gentleman. The first day I worked in this office Mr. Larkins came over to my machine and said, "Is everything all right? Is anything bothering you?" I said, "Don't bother about me; any time this machine doesn't suit me I will tell you."

I am much older today. In fact I am fifty-two. At the time I worked with Mr. Larkins I was twenty-two. Mr. Larkins was a man of great experience and as I have grown older I have often wondered what he thought of a young swell-headed fellow like me talking to him as I did. However, we became very good friends.

Continued Next Month

Makes Plea for Finer Craftsmen

By GEO. B. GANNETT*

George B. Gannett points out the responsibility of the employer in training apprentices and says the day of "cut-and-try" methods is past.

THERE are two statements of fact which we mention when we speak of the "printing business." However, it is not a business—it is a profession and a profession that all of us should be more than proud of. It is not just simply a "stop gap," not simply something to step into until better things show up; it is one of the greatest, the finest and largest things we have in industry.

The second proposition is this, that in the printing industry the possibility of gain commensurate with the amount of effort, thought, time and education is greater than any other known industry. I defy contradiction of that statement.

When we consider this printing profession of ours we realize the important factor it is in industry, art and science which are all dependent on printing. Consider for one moment, how far the scientist of today would get if it were not for the printing profession; consider any industry, any gainful occupation that you know and down underneath all of it, even superceding technical knowledge, is that one cornerstone, the printing profession. You cannot get along without it.

Very few of us would go into an athletic contest without training our muscles, be it whatever branch of athletics we went into. If we did we would be doomed to defeat in the very beginning. Yet, how many of us (and I say this with all due respect)—look at the technical side, the scientific side, the very, very necessary detailed side, before we ask or permit anyone to enter into our profession?

We buy machinery, expensive or cheap as we see fit. We immediately inquire what is back of that machinery, what it will do, what can it do, what possibilities has it? And yet, I daresay, that very, very seldom, when a new man enters your organization, do you say to him, "Now, Jim (or Bill, or whatever his name is) what do you know about the printing business? What do you know about this profession?" "Well," he will say, "I have done this and I have done that," and so on and so forth. "I know, but what do you know about this wonderful profession that you mean to dedicate your life to?" The chances are, nine times out of ten, he doesn't know.

He has seen schedules around places, where a compositor gets so much and a pressman gets so much and it looks pretty good to him, but has he back of that the real genuine urge, if you please, to comply with the rules; has he the ability, has he the stick-to-it-iveness necessary to produce a real, genuine Craftsman? Lots of apprentices, yet; jóurneymen, a few; *craftsmen, very few.*

I believe I can say, without fear of contradiction, that there is more general knowledge necessary in the various branches of industry, art, science, education, for a man to become a successful craftsman than anything else. In the composing-room end he must have a knowledge of composition, and he should at least have some trend toward or liking for literature. If he gets into the mechanical end he must have some knowledge of machinery and I think you will agree with me that it is more necessary to have at least a smattering of scientific knowledge related to inks, papers, atmospheric conditions and so on.

We have the craftsman and we have the workman. The craftsman is the man who takes pride in his production, he has that wonderful joy of creation, he has that desire to succeed, which is far and away above the six o'clock and the pay envelope.

On the other hand, we have the workman who comes in and gets a job and that is the end. He is content to go along with the crowd, keep up, if possible. But is he imbued, is he forced, has he that urge toward producing a masterpiece or becoming a craftsman? That is the question I think all of you should decide.

I think the situation today between employer and employee is one that will bear our most careful consideration and our deepest thought. It would be bromidical for me to stand here and tell you that the ambitions, the desires, the problems of employer and employee are the same—you know that.

Let me repeat a little conversation I heard some time ago. I got to my office rather early one morning. There was a group of our men standing in front of the plant. One man said, "Bill, I don't see why this firm doesn't make a pile of money. They pay me a dollar an hour for my work and they get three dollars and twenty cents an hour for it." Bill said, "That's right, but there is this overhead." "Well, what is

Continued on page 28

*President, Geo. D. Barnard Stationery Co., St. Louis, Mo. Abstract of address delivered before the convention of the International Association of Printing House Craftsmen, Aug. 17-19, St. Louis, Mo.

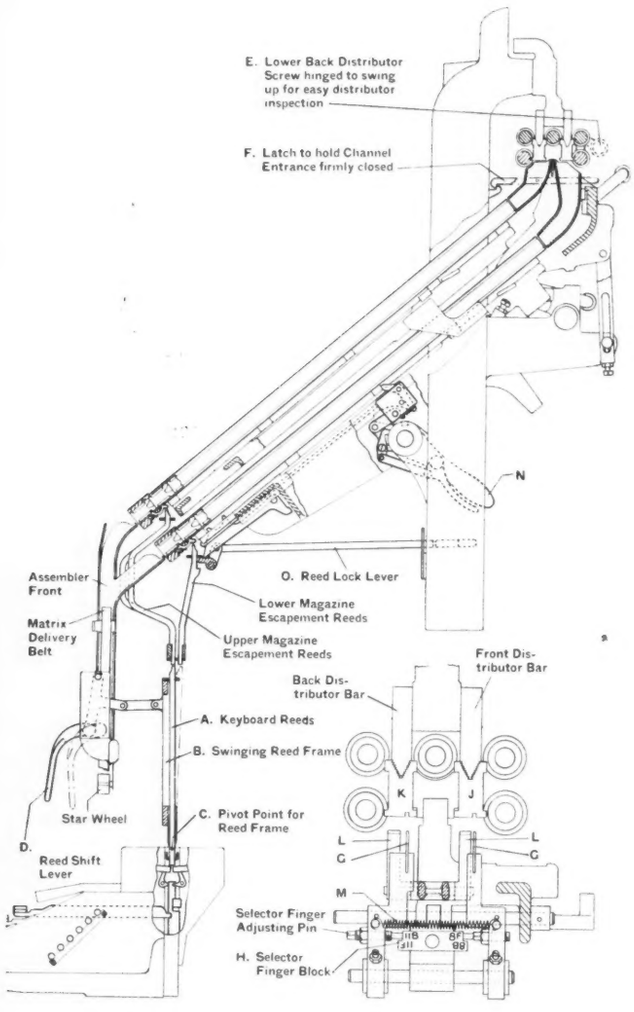
The New Intertype Mixer—Model F

By L. W. Willis*

The ensuing discussion of design and operating features is intended to point out the details of construction of the new Intertype Model F Mixer.

The principal features of the machine are as follows:

(1) Two sizes or four styles of type carried in two standard 90-channel magazines are available from one keyboard; (2) Changes from one face to another are made by means of a lever just above the keyboard; (3) The distance matrices travel when released from both the upper and lower magazines is the same as for single distributor Intertypes; (4) Continuous, automatic matrix distribution to both magazines



is obtained by a single distributor box which feeds the matrices directly to the respective distributors.

As will be seen in the illustration, a set of keyboard reeds, *A*, carried in a swinging frame, *B*, runs upward from the keyboard directly beneath one or the other sets of upper reeds which extend upwardly to the respective magazine escapements. The reed frame, *B*, rests at each side in a notch, *C*, on the keyboard frame so that it may swing with freedom whenever the reed shift lever, *D*, which is linked to the frame, B, is operated. If the machine is equipped with auxiliary side magazines and keyboard, another lever, slightly longer and at the right side of the lever, *D*, is provided for swinging the side keyboard reeds in exactly the same manner as for the main magazines.

Both magazines are fixed as to position and stand at the same angle as the magazines on any standard Intertype machine. Magazines are removed from and are applied to the frame in the same manner as on other Intertypes—from the rear of the machine.

Both channel entrances are mounted in a single frame suitably counterbalanced. The channel entrance unit is held firmly in place against the top of the magazines by a latch, *F*.

A convenience has been provided to aid inspection of the distributor wherein the lower back distributor screw, *E*, can be swung out separately while matrices are on the distributor bar, without disengaging the drive gears. When the distributor screw, *E*, is swung out as indicated, matrices in the course of distribution on the bar are obviously more visible. When any trouble due to a "tangled" matrix or the like has been corrected, the screw, *E*, can be turned down again on its hinged bearing and will automatically mesh in proper timed relation with the drive gears.

The distributor mechanism employs a single distributor box. All matrices for either magazine pass through the single distributor box and directly therefrom to their respective distributors. The box swings automatically from one distributor to the other, its position being controlled by a notch in the bottom of the matrix.

The selector fingers, *G-G*, which cooperate with the matrix notch are set by an exchangeable selector block, *H*. The ends of this block, as shown, serve to space the levers to which the selector fingers, *G-G*, are attached, so that these fingers lie in correct position to align with their respective cooperating notches in the matrices. The matrix, *J*, has its front notch closer to the center than the like notch in the matrix, *K*.

When a matrix for the back distributor is presented for distribution and the distributor box has been set to deliver a matrix to the front distributor, the front selector finger, *G*, will not align with the notch in the newly-presented matrix and the finger will therefore be pushed forward and throw out the clutch which allows the distributor box to swing to position before the back distributor.

The matrix lift fingers, *L*, are so arranged as to be moved forward whenever the selector fingers, *G-G*, are engaged by the bottom of a matrix, the notch in which does not correspond therewith. The lifts are thus active to rise and fall, but out from under the matrix presented for distribution until the distributor box swings in place before one or the other distributor. A spring, *M*, holds the adjustable pins in the two selector feeler finger levers firmly against the selector block.

A convenient handle, *N*, is provided for sliding the lower magazine back on its frame in order to clear the reeds for the upper magazine before tilting the magazines to the rear for removal. A safety reed locking lever, *O*, is also provided so as to avoid forcibly tilting the magazines against a reed that may be inadvertently raised. After pushing the lever, *O*, forward the handle, *N*, can be turned to locked position and the magazines tilted to the rear.

*Assistant Supervising Engineer, Intertype Corporation, Brooklyn, N. Y.

Testing Paper and Ink in the Shop

By SUMMERFIELD ENEY, JR.*

IN MY travels about, I find that knowledge of the technicalities of printing is almost universal. In printing a heavy form on an ordinary grade of 50 or 60-pound stock the sheet sometimes bites out at the grippers. Almost invariably this is caused by overpacking of the cylinder, which in turn is frequently caused on presses where patent bases are used by virtue of the fact that the electrotyper always allows for interlaying or underlaying, and the pressman fails to put enough under the plates to bring them type-high.

I find that the manufacturers of bases do not all have the same height base. For instance, the Warnock base is 0.759 and the Blatchford base is 0.757. Warnock recommends that the plate be between 0.153 (11 points) and 0.159 thick, depending upon how much underlay the printer cares to use. The Blatchford base being 0.757, they recommend the use of 0.153 plates, the total of which makes 0.910 and allows for 0.008 underlay. I am wondering what happens when a set of plates are made for one base and then turned over to a printer who has another manufacturer's base. That is why I offer the suggestion that the exact thickness of the plate be known by the printer, who will know just what to do with them, no matter whose base is used, providing, of course, he knows the height of the base he has.

When the pressman starts to make ready on a press where a patent base is used, if he finds that all of the plates are fairly level and not one of them requires any special underlaying it is highly probably that he will not underlay any of them. If he finds two or three plates unusually low, he brings these up to the level of the others and proceeds to make ready from then on by overlaying on the packing—not taking into consideration that the electrotypers purposely made all the plates low. I think much of this could be overcome by the electrotyper if he would gage these plates and mark them exactly what they are. In other words, I would not ask the electrotypers for precision but for the facts concerning each individual plate. This, in my opinion, would help the great majority of printers who have no premakeready system. However, I do not want you to get the idea that I disapprove of these systems. As a matter of fact, I heartily indorse them and I look forward to the day of precision plates, but until that millenium arrives I think we should do what we can to help printers and pressmen to work with the tools and systems they now have. For saying this I expect all of the electrotypers to rise up and heap upon me names, but I can see no reason why the thickness or height of a plate should be a secret, nor does it seem an impossible task for electrotypers to stamp on each plate just how thick or, in case of a wood-block mounted electro, the exact height, so the pressman will know just exactly how to treat them.

SOME OBSERVATIONS REGARDING INK

I must have been a very stupid pressman in regard to ink. I never knew enough about the chemistry of ink to "monkey" with it much, but almost every day I find a fellow in the press room who knows so much in a secret way about what to do to make the Blank Ink

Figure 1

Co.'s ink print the way it should that I marvel that the ink companies do not throw all their formulas and chemists into the discard and hire in their place a few magicians from the press room, and I don't put the blame for this condition on the pressman. It has become a custom with them. They are trained or train themselves in this fashion and I see no remedy for this except a general education along the lines of using the ink out of the can as is or else call the ink maker and have him manipulate or change the character of the ink. In other words, I think it is up to the ink man to teach the pressman to let the ink alone or else know what he is about when he attempts to change the ink maker's product, and whatever changes he makes should not be made by rule of thumb, but by very accurate measurement. Then many of the mysteries and secrets of the press room would be an open book and we would all know what it was about.

It seems to me that there could be something very definite and positive found out about the ink we are going to use and its relation to the paper we are going to print on before we go to press.

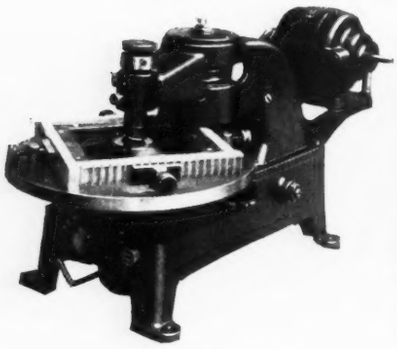
We can determine the tonal quality of our inks and make an excellent comparable test of one or more grades by depositing exact amounts of each ink on a sheet of newsprint or bond paper, preferably bond for the better grades of ink, and drawing them down very

Continued on page 26

*Champion Coated Paper Co., Hamilton, Ohio. Paper read before the Printing Industries Division, A. S. M. E., Washington, D. C.

Latest Printing Equipment Mechanisms

Mergenthaler Surfacing Machine



A surfacing machine for all forms of display type metal printing material has been announced by the Mergenthaler Linotype Company.

"This is a precision tool designed and built with characteristic Linotype workmanship and quality throughout," runs the Mergenthaler announcement. "It is so simple in principle, so certain in operation, so productive in capacity that a five-minute demonstration will amaze you.

"Production is continuous, and anyone in the composing room can operate it. Material to be processed may be inserted and removed without slowing or stopping the machine. The depth of cut may be regulated within the fractional part of 0.001 in."

Monotype Cabinets for Molds and Matrices

The Hamilton Mfg. Co., Two Rivers, Wis., has announced a series of four steel monotype mold and matrix cabinets which are designed to accommodate and systematically store matrix sorts, matrix cases, composition, display, lead and rule molds and normal wedges according to the needs of the size plant for which they may be selected. Each of the four kinds of cabinets is designed for a different purpose. Each cabinet is fitted with a steel roll front and a lock. The cabinet measurements are: Width, 24 in.; depth, 15½ in.; height, 40¾ in.

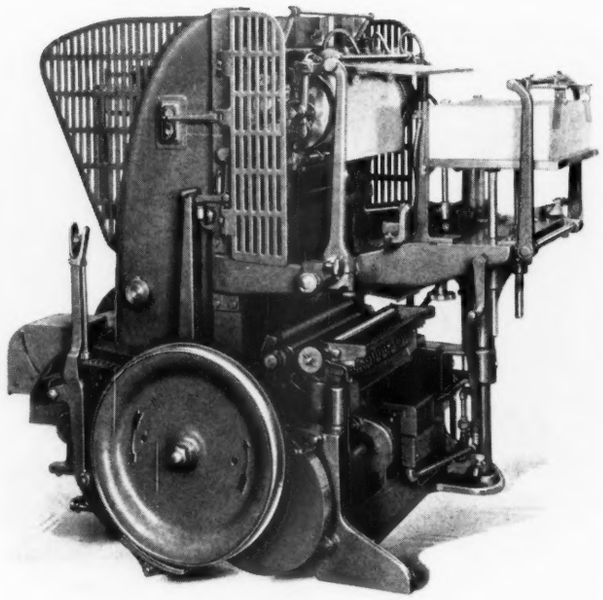
Combination All-Size Rotary Press

The doing of many kinds of specialty and commercial printing has been made possible by the new Type "BT" All-Size Rotary Press, which is manufactured by The Specialty Automatic Machine Co., Medford, Mass. The Gibbs-Brower Co., Inc., 401 Broadway, New York, N. Y., are selling agents for the press.

The press can be operated as either a standard or intermittent rotary. When used as an intermittent rotary, almost any unit of printing can be continuously produced. If a printer has a quantity of printing demanding the use of wide circumference of cylinders, and a number of orders requiring less cylinder circumference, the press can be operated as a plain rotary on the higher speeds permissible, but when coming to the odd sizes, the press can be shifted to the all-size principle and the odd lots of work can be produced on this basis.

When the press is operated as an intermittent rotary, the same results can be obtained with one set of printing plates as on a plain rotary when the cylinder is filled. This feature is desirable on short runs because it saves makeready time as well as investment in plates.

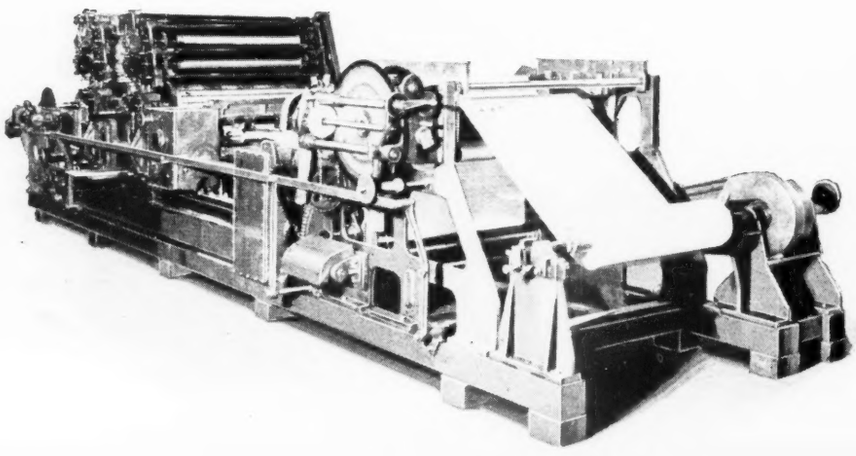
The Type "BT" press is said to be ruggedly built and its operation is vibrationless.



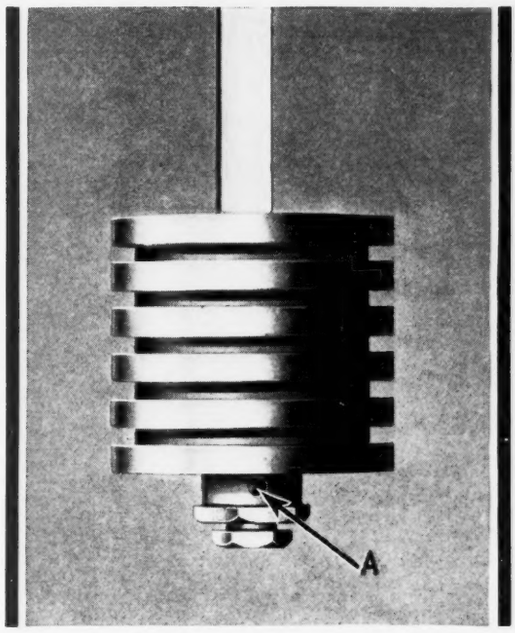
New Miehle Vertical Press

In perfecting the new model Miehle Vertical Press, the Miehle Printing Press & Manufacturing Co., 14th Street and So. Damien Avenue, Chicago, Ill., retained all the desirable features of the original press. To meet the requirements of higher speed certain requirements were necessary, some of which are heavier castings, improved lubrication, the use of new and harder alloys and the protection of important mechanisms with safety devices. The speed range of the new press is from 2500 to 4500 impressions per hour as compared to the original speed range of 2000 to 3600 impressions per hour.

The specifications for the new Miehle Vertical are as follows: Inside chase measurement, 13¾ in. x 19¾ in.; type matter locked in chase, 12¼ in. x 19 in.; largest sheet which can be delivered, 13½ in. x 20 in.; distribution: 2 form rollers with steel-geared vibrator, 2 composition distributors with steel-geared vibrator, 10 in. full-length ink plate, ductor roller, full-length fountain; overall measurements: width, 4 ft., length 5 ft., height 4 ft. 6 in., speed range per hour, 2500 to 4500; size motor required, 3 h. p.; net weight with motor, approximately 2500 lbs.; shipping weight with motor, approximately 3200 lbs.



Adjust Metal Compression for a Perfect Slug . . .



The quality of slug you need for good printing—a slug with a smooth, firm face and a solid body to stand up under long runs—depends almost entirely upon correct metal compression.

The Linotype Pot Pump Plunger assures this correct compression by its adjustable vent-hole feature—shown at A, at the lower end of the plunger. These openings may be regulated to control compression for varied casting conditions.

At every cast the plunger makes a full stroke in the well, thereby constantly agitating the metal and preventing dross from accumulating in the well or plunger. The vent hole—a vital feature to correct metal compression—is an exclusive and valuable Linotype feature. Applicable to any Linotype. Order from the nearest agency: F-4484, for Plunger and Rod, assembled, Price, $6.25. F-4049 for Plunger only, Price, $3.50.

For Keeping Plunger Rods Clean—

REPELLO

Prevent metal adhesion and dross accumulation on plunger rods with REPELLO—the new Linotype chemical compound. One coating applied directly on the rod—a few minutes' work—effectively repels all metal accumulation for several months. REPELLO is fully guaranteed if applied according to directions. One stick will treat more than 50 machines—complete directions with each box. In stock at all agencies—F-4908, Price, $1.00

TRADE **LINOTYPE** MARK

MERGENTHALER LINOTYPE COMPANY

BROOKLYN, NEW YORK · · · SAN FRANCISCO · · · CHICAGO
NEW ORLEANS · · · CANADIAN LINOTYPE, LIMITED, TORONTO, CANADA

Representatives in the Principal Cities of the World

Linotype Metro Series

Certified Value

The experiences of hundreds of publishers over the past eight years is the best proof of Certified service.

●

A case of Certified mats used in your stereotype department under your own working conditions will enable you to judge their comparative value.

●

Price is only one of the factors to be considered in determining value. To properly evaluate any commodity, its inherent quality, its utility, and the service which comes with it must be taken into consideration.

●

We respectfully invite you to become acquainted with Certified quality and Certified service, and in that way demonstrate to yourself actual Certified value.

●

Forget price! Use quality at the right price! It pays!

CERTIFIED DRY MAT CORPORATION

338 Madison Avenue New York

For dependable stereotyping— use Certified Dry Mats

Made in U. S. A.

Your Questions Answered

Melting of Printers' Rollers

W. S. writes that he would appreciate some information relative to the melting of composition rollers.

Ans.—An authority on the subject of printers' rollers says that the best prevention for melting rollers is a competent pressman. This is not written in a sarcastic or ironic vein. There is no excuse at all for rollers melting on the press while in operation, if they are ordered as they should be ordered, and properly adjusted and handled when on the press.

Ordinarily, rollers are two kinds, one made of a material to resist the hardening effects of the cold, intended for winter use, and the other made of a material to resist the softening effects of the heat, to be used in the summer months. It frequently happens that rollers made in the late fall, for winter use, can and do run through the ensuing summer, but it is not guaranteed by the manufacturers that this roller will do so, nor has it yet been determined that by running it through the winter season and ensuing summer any economy is derived.

The primary object of purchasing a printer's roller at all is to properly distribute the ink on the printing press so that the forms will be properly inked in order to make the right impression on the paper being printed. If, because of rollers being used beyond their natural period of life, this proper ink distribution is impaired, the cost of using a roller will amount to many times the cost of replacing it, and its continued use is an extravagance.

There has been developed in past years a non-meltable composition intended specially for use on high-speed presses, so that the presses can be operated at their maximum capacity without danger of the rollers melting because of excessive friction and heat engendered thereby. The material of which the roller is made, being non-meltable, does not of itself obviate all other difficulties and objections, nor does it follow that a roller of non-meltable material will last forever.

Rollers made of non-meltable material cost more than the usual remeltable composition, and in the interest of economy, nonmeltable material should not be ordered unless the exigencies of the case demand it. When it is necessary, the service given by it more than justifies its additional cost, but it is a foolish extravagance to order nonmeltable material for the ordinary run of press work, for the simple reason that regular composition need not melt on the press, and in fact, seldom does; and if it does, the reason for it can be found and steps taken to prevent a repetition.

Rollers cost but very little, and it is a false economy to continue to use them when by their use additional expense is incurred which might be avoided by the use of new rollers.

Any roller-maker will always be glad to cooperate with his customer to bring about the most satisfactory results.

Referring to "Rollers," a treatise published by Bingham Bros. Co., the following essential information on the melting of rollers is given:

Frictional heat will melt or soften composition rollers. When melted, the composition flows over the forms. When softened, the composition stretches and wraps around the vibrator or the other composition rollers. Rollers will heat from friction and melt when set too hard on the form or vibrator. When set too closely on one end the composition softens or melts at that end. If the ink contains too much tack or drier, or the temperature and humidity are too high for the grade of rollers, the composition will melt in the center. If the roller shaft bearings are not properly lubricated the journals heat from friction. The heat travels through the stock and melts the composition at the core.

Continued on page 20

The net paid circulation for October exceeded
Daily - 1,360,000
Sunday-1,740,000

DAILY NEWS
NEW YORK'S PICTURE NEWSPAPER

FINAL
MUrray Hill 2-1234

Copyright, 1931, by News Syndicate Co., Inc. Reg. U. S. Pat. Off. Entered as 2nd class matter Post Office, New York, N. Y.

Vol. 13, No. 130 40 Pages ★★★ New York, Wednesday, November 25, 1931★ 2 Cents IN CITY LIMITS | 3 CENTS Elsewhere

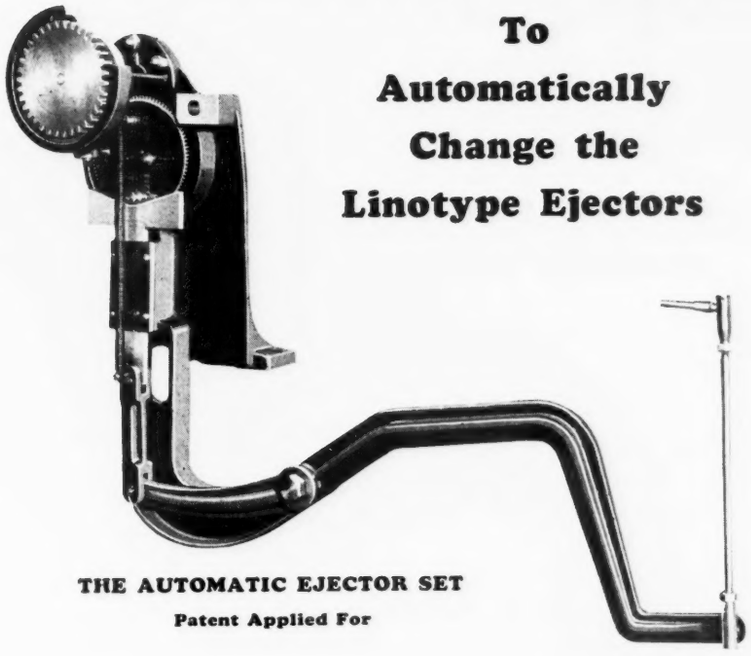
JAPANESE PAINT 12,000 IN NEW

Has Installed

36

Automatic Ejector Sets

To Automatically Change the Linotype Ejectors



THE AUTOMATIC EJECTOR SET
Patent Applied For

On September 29, *The New York News* ordered one Automatic Ejector Set on trial . . . . .

November 9, *The News* ordered 35 additional Automatic Ejector Sets for application to its battery of Linotype machines.

To learn how you, too, may enjoy the same operating economies, fill out the coupon below and mail it.

You Should Investigate Its Money-Saving Advantages

The Time Saving Device Co., Inc.

599 Kenmore Ave., S. E.
WARREN, OHIO

For literature and further particulars concerning the Automatic Ejector Set, clip this coupon.

Name _____

Firm _____

Address _____

City _____ *State* _____

Going Beyond The Standardized Stage

WHILE Wood Dry Mats are standardized in major particulars, they are specialized in many other respects, depending upon the needs of your plant.

The problems of production are mill problems and our manufacturing processes are developed to a high degree along most modern lines, in order to assure as nearly faultless dry mat production as possible.

The problems of the individual newspaper plant and its Stereo foundry are problems for our research laboratory and our service men. Their job is to assure you of satisfactory production through Wood Dry Mats.

It is the harmonious combination of these two phases of Wood service which so firmly fastens our customers to us.

Let us in on your problems so we can demonstrate Wood service to you.

WOOD

FLONG CORPORATION
HOOSICK FALLS, N.Y.

If toward the end of a day's run the roller have warmed up, reduce the speed of the press and allow them to cool while rotating. This will maintain their true diameter. If set off for the night while in a heated condition, they will become lop-sided. If removed from the press and stood on end the composition will sag.

When the form is not properly underlaid, the rollers have to be set too low to ink the lowest spot of the form, forcing the rollers to ride hard on the high spots. This causes friction and within a short time the rollers will have melted or chipped.

Do Mechanical Executives Support American Industry?

By GEO. R. HOMER

The American newspaper publisher as a class takes second place to none as a patriot and as a champion of the welfare of the American people.

During the world-wide depression American publishers have done their bit to foster the interests of the American workman, to allay hunger of the unemployed and to prevent unnecessary suffering among their families. Generally speaking, the American publisher has been in the van of all the unemployment emergency movements and has given unstintingly of his time and money to promote the welfare of this country.

Nevertheless, it is surprising but true to find certain American publishers using foreign-made products in the production of their newspapers, and in the use of their syndicate services.

The American business man, whose policy it has been in past years to buy everywhere in the world the best that the world produces, is now giving preference to products made in America by American workmen for American consumption.

One of our leading department stores recently made a statement in paid space which to my mind is typical of the attitude which American business men should adopt under present conditions. We quote as follows:

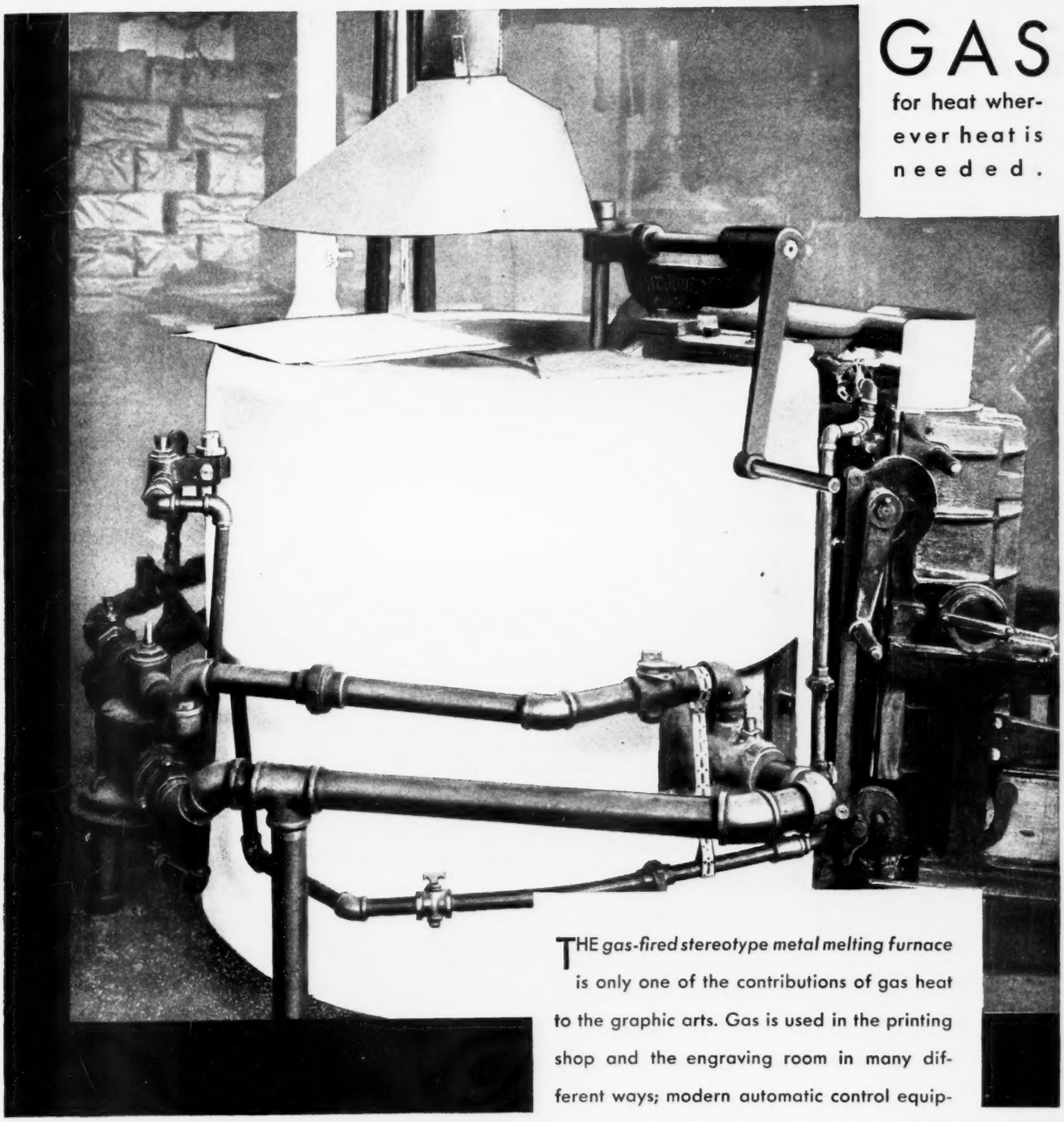
> Altman's policy, year in and year out, has been to buy everywhere in the world the best that the world produces.
>
> But because of the fact that American workers lack employment, and American factories lack orders at this moment, the special policy of Altman's, today, is to sell as much as possible of merchandise of the highest class made by American workers in American factories of American materials for American consumers.

The American business man and the American worker are not seeking charity—though they do say that charity should begin at home; they are both seeking the opportunity of being gainfully employed, and to such employment they have a right.

But what of the publisher who uses foreign materials with which to produce his newspaper—newspapers that are made for and to be read by the American business man and the American workman. If our publishers are not to support American products who shall eventually advertise in American newspapers, and who shall read them?

My personal experience has been limited to dry mats used in the stereotype departments of our daily newspapers to convert the flat forms as set up in the composing room into curved plates are required by the press room, but in principle what I am saying applies to newsprint paper, ink and any other product entering into the production of American newspapers.

The one who buys may feel that he is acting in the best interests of his employer if he buys wherever he can as cheaply as possible. In many plants the production manager, mechanical superintendent or foreman of the stereotype department may do the ordering. Regardless of who orders,



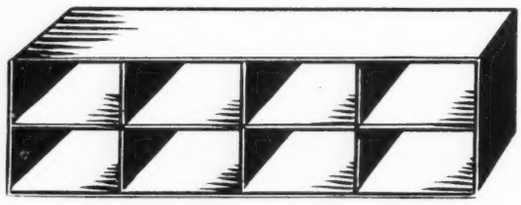
GAS

for heat wherever heat is needed.

THE *gas-fired stereotype metal melting furnace* is only one of the contributions of gas heat to the graphic arts. Gas is used in the printing shop and the engraving room in many different ways; modern automatic control equipment, together with this modern fuel, makes a combination indispensable to those who work with ink and paper. The new book "Gas Heat in Industry" is a veritable textbook on the myriad uses of gas for industrial purposes. Send for a copy of it.

AMERICAN *Gas* ASSOCIATION

420 Lexington Avenue
New York



Cut Strips

OF

Gummed Packing Felts

Packed in

Pigeon Hole Containers

Cut 1/8" to 1" any Gauge or Width

Eliminates Waste *Saves Time*

Sold on Our Sheet Basis
No Cutting Charge

Plain Packing Felt
in
Rolls 12" x 36"
Sheets 18" x 28"
Cut Strips

Superior Cork Blankets

Superior Tail Boards

American Publishers' Supply Company

P. O. Box 131, West Lynn, Mass.

let us examine this attitude and viewpoint more closely and see whether the one who orders is really acting in the best interests of his employer when he buys foreign-made materials. Unquestionably he honestly believes he is.

Let us follow this attitude to its logical conclusion. What would happen if his employer used foreign newsprint, imported ink and refined metals, alien dry mats, and so on all along the line because he can buy these products cheaper than those of American manufacture? The American workman now unemployed would be kept out of work, and the American workman now employed would be added to the ranks of the unemployed and cease to be a buyer of merchandise and services.

Who, then, is going to advertise in the American publisher's newspaper, and who is going to read it? Enlightened self-interest has taught the American publisher that he is vitally interested in the welfare and prosperity of his community, because upon such prosperity depends his own.

Every publisher who under present conditions is buying foreign-made materials is working against the best interests of American business; particularly so when American products of superior quality are available at reasonable prices.

Auxiliary Mouthpiece Vent for Linotype

EACH metal pot mouthpiece on the Linotypes in the plant of the New York *Herald-Tribune* has been provided with an auxiliary vent crease which is designed to increase the solidity of the slugs by improving the means of air displacement which takes place at the time metal is pumped into the mold cell.

Briefly, the auxiliary vent consists of a horizontal groove in the mouthpiece bisecting the jets. The groove is 0.005 in. to 0.006 in. deep. As will be seen in the

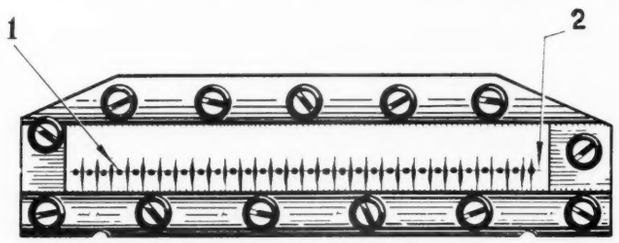
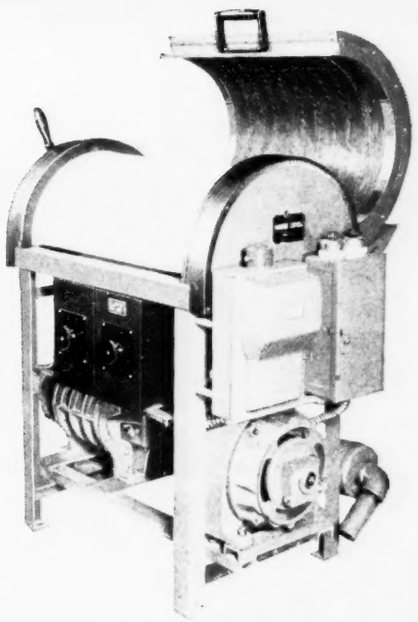


diagram of the mouthpiece, the continuous vent connects adjacent jets as shown at *1* and extends beyond the extreme right and left jets a distance equal to the center distance of the jet diameter as shown at *2*. The groove may be cut in the mouthpiece with a milling cutter before application to the crucible, or any convenient scribing tool may be used to score the mouthpiece. Any burrs caused by the cutting tool may be removed with a stone.

In experimenting with the horizontal vent an identical number of slugs from one machine were cast and weighed before and after cutting the vent. I. Bardsley superintendent of the *Herald-Tribune* composing room, states that so far as he has been able to determine, the additional venting produces slugs approximately 5% to 10% heavier than before scoring the mouthpieces.

STA-HI



offers the outstanding achievement in MODERN DRY MAT forming and scorching.

The Sta-Hi Dual Heat-Precision Dry Mat Former is equipped with every known modern electrical and mechanical device, built to rapidly remove conditioning moisture from any make of dry mats, forming with an even all over casting face and scorching on both sides at the same time. Plates cast from dry mats prepared in this wonderful machine have an even all over printing contour, producing a Better Looking Newspaper and effecting manifold economies in both Press and Stereotype Rooms.

Consider These 20 Points of Value

1 Cline-Westinghouse Motor and Control.
2 Vacuum Pump—International-Stacey.
3 United States steel frame.
4 Armco steel vacuum plate.
5 Powell vacuum pump silencer.
6 Powell valves throughout.
7 Jas. P. Marsh vacuum gage.
8 American Transformer Co. heat control.
9 Roebling slow burning wire.
10 A. G. Mfg. Co. fuse cabinet.
11 Weigand "Chromalox" heating elements.
12 Trumbull heater switches.
13 Keasbey & Mattison asbestos covering.
14 Johns-Manville Thermal insulation.
15 U. S. Steel vacuum chamber—non-warping.
16 Special spring steel flexible base heater.
17 Special Alloy steel vacuum plate stops.
18 Special steel hinges on vacuum chamber.
19 Du Pont enamel finish.
20 Crane & Company—Fittings.

If you want a means of producing better printing, faster routine of preparing dry mats—here is the actuality and worthy of your consideration.

Complete machine, assembled in One Unit, ready to connect to your power supply lines

F. O. B. FACTORY

$1600

$400 on Contract—Balance Monthly

STA-HI NEWSPAPER SUPPLY CO., INC.

417 Oregonian Bldg., Portland, Oregon; 1235 Westlake Ave. N., Seattle, Wash.; Bendix Bldg., 1206 Maple Ave., Los Angeles, or Write the Goss Printing Press Co., Chicago, General Agents.

"—and a happy New Year!"

WHETHER the New Year will bring success and happiness may depend more upon the individual than he realizes. Will he remain the paralyzed victim of *mass hysteria, fear and distrust*, or will he be found among the courageous and patriotic leaders along the highway of *restored confidence and business sanity?*

Prosperity is *not* just around the corner, but the *road to Prosperity* lies immediately ahead of us, and he who possesses vision and ability to read the guide posts will travel fastest toward the golden harvest that surely awaits the enterprising and alert American business man.

Prepare for the prosperity that is to come, by taking full advantage of the business opportunities presented now.

Economy is the watchword, but economy by no means justifies a policy of sitting idle and waiting.

Be up and doing!

If you are in the publishing or printing business, or if you are a paper manufacturer or the manufacturer of any paper or fibre products, the successful development and growth of your business must depend upon your ability to produce the most satisfactory results at the most reasonable cost. You cannot afford, particularly in times like the present, to ignore any development in the trade that will improve your product, increase your output and, at the same time, save you money.

Vapo Systems, Inc., has perfected a device which will do *all* of these things, through properly conditioning paper under all circumstances by means of a series of high velocity jets. The device is small and simple and may be attached to any kind of printing press or to any machine used in paper manufacture. It can be adjusted to give any amount of moisture desired at any time. It is electrically controlled and fully automatic.

Attached to the printing press at the point where the speeding web enters the cylinders, Vapo Systems heads impart to the paper a perfect moisture which results in greatly improved printing, saving in paper through fewer web breaks, saving in ink because of more economical spread, complete elimination of hazardous and annoying static, and increased output at the fly as a result of higher press speeds and uninterrupted running.

We sincerely wish you a happy New Year, and we unhesitatingly recommend, as a means toward that end, that you communicate with us at once regarding the specific application of this principle of direct humidification to your plant. An inquiry will place you under no obligation and we shall be pleased to offer any helpful suggestions possible.

Vapo Systems
Incorporated

211 West Wacker Drive CHICAGO, ILLINOIS

Plastic Printing Inks for Rapid Drying

Continued from page 9

The first remembered were samples made by chemists working on light-weight paints for painting airplane wings during the war. Cotton, camphor, celluloid, rubber, paper, wool and even straw were some of the ingredients. They were inexpensive and lasting enough for an ink but they all were of a type which dried too quickly in the fountains and on the rolls and plates. Recently, however, samples from several manufacturers have shown enough improvement in this respect to make a pretty good ink. Solvents, too, have been so greatly reduced as to prove no serious objection in the pressroom.

One manufacturer has presented an ink capable of drying with a very brief exposure to heat which will remain moist on inking rolls and plates for a long time. There are many points to be worked out concerning its use as a commercial ink for magazines or newspapers. It gives great promise, however, there being little doubt as to its ultimate success if the necessary work upon it is persistently carried on to a finish. Others are close behind.

The use of such an ink when perfected will eliminated wax sprays, slip sheets or offset paper rolls for multi-color commercial printing. It will be less expensive and save in addition many considerable factors in manufacture and cost of production. It will make possible newspapers printed in multi-color daily as cheaply as those which are now printed in black. There will be no trouble with registry upon a color cylinder. As these inks can be dried in a foot or two of web length, colors may be applied immediately on the reverse side and go directly to the folding devices at present press speeds. Some very fine pictures and advertising illustrations have been experimentally produced in colors on regular newspaper stock. If desired, the rough, porous nature of the paper can be taken care of just under the picture only by means of a rapid-drying printed ground color film. The ground coat is required only when particularly fine illustrations are required, like the reproduction of an oil painting for example.

It is safe to predict for the very near future newspaper colored back-page advertising of a high-class type comparable with our good magazines.

As we emerge shortly from this present state of depressed business we will find many changes in the order of things. One of the changes will be an increased use for advertising in selling. Good illustrations are far more effective than high-sounding descriptive phrases. The newspaper can fill a need never reached by the magazines. They need not be viewed as competitors in any sense. Magazines are national mediums and newspapers are strictly local mediums with few exceptions. There is no reason at all why newspapers should not find good illustrative advertising in colors profitable.

Edward J. Volz

Continued from page 8

and has encouraged the establishment of unemployment benefit systems by local unions.

By virtue of his office he is a member of the board of governors of the International Allied Printing Trades Association composed of the executive officers of the five major international printing trades' unions; member of advisory committee (representing American Federation of Labor) of prison industry and wages; chairman committee on banking and Insurance, New York State Fedaration of Labor; chairman committee on insurance, Central Trades and Labor Council of New York City; member of advisory committee, Federation (Labor) Bank & Trust Company of New York City, and a member of the advisory committee, Union Labor Life Insurance Company.

Burgess Chrome Mats

A Laboratory Product

OUTSTANDING

IN QUALITY • A firm bodied, practically non-porous mat, constructed of the highest quality materials, producing unquestionably the finest printing stereotype plates.

IN SERVICE • Our representatives are seasoned, experienced practical men—able and willing to assist you at all times to alleviate or eliminate your stereotyping troubles. Their services are yours for the asking.

IN PRICE • We quote as low a price as is commensurate with quality and good business practice. Our prices are published, the same to one and all, having no special discounts for cash, quantity purchases or contracts. A fair and square deal for all is our policy.

Our claim to your patronage rests on our ability to maintain the above to your entire satisfaction.

BURGESS CELLULOSE COMPANY

Division of C. F. Burgess Laboratories, Inc.

Freeport, Illinois

Hand Spaceband Cleaning is Dirty, Slow, and Expensive

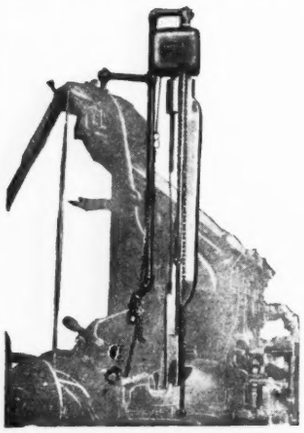
Why put up with dirty, slow, expensive work when a

Rockaway Spaceband Cleaner

will clean, polish and graphite thirty bands per minute, true the sleeve of band to give a perfect lockup of matrices, lengthen spaceband or matrix life, and at the same time pay for itself in a year's time? Investigate now! Write and let us give you detailed information and prices without any obligation on your part.

THE ROCKAWAY COMPANY
5409 Vliet Street **Milwaukee, Wis.**

THE MARGACH
Automatic Metal Feeders
for
Linotype
Intertype
Monotype
Ludlow
Elrod



No other article in the Printing Industry can answer its purpose more effectively than the Margach Feeder, which not only sells for the moderate price of $75.00, but its life of 100% efficiency is guaranteed for ten years—and will undoubtedly last indefinitely, 10,000 users can testify to this. Among our sales representatives are the Mergenthaler Linotype Co., Intertype Corporation, Lanston Monotype Co., and the Ludlow Typograph Co.

MARGACH MFG. CO., INC.
HERMAN DIAMOND, President
213 CENTRE STREET NEW YORK CITY

Testing Paper and Ink In the Shop

Continued from page 15

close together. In the Fig. 1, these draw-downs are shown separated but they should be drawn close together. By holding these draw-downs up to the light the relative value of each ink may be seen at a glance. If we are to determine the color of the toner in a halftone black the same method can be used.

By tapping out the ink with our fingers, as shown in Fig. 2, we can determine very closely whether the ink will set quickly, just how long it takes

Figure 2

to dry, and whether or not it will pick in the case of a coated sheet. There are many tests for determining whether or not coating will pick, such as wetting the thumb and pressing down hard and snapping away, and the sealing wax test; but I prefer the use of the fingers with the ink we propose to use for that particular job.

We can also draw one color across another and get a fairly good idea of what our printed result will be, in the case of overprinting or trapping of colors. I must confess that this is not an infallible rule, but I do believe that with its use the pressman will quickly learn a great deal more about what will happen to his ink at a great deal lower cost to his employer if he will adopt this method. It will interest you to know that this simple method is used by many of the large companies, such as the Hearst magazines, under the supervision of Floyd Wilder.

THE CUTTING OF PAPER

It would seem that almost everybody would realize the importance of proper cutting of paper for the small automatic presses. I believe all the paper makers, especially those making coated papers, trim all of their coated paper on all four sides, but I find that it is common practice in very nearly all shops to take a sheet of 25 by 38 or 38 by 50 and simply cut it in half or quarters, as required, and send the cut stock to the press room, and it would seem that this is good practice.

But, when we cut a life of paper in half, that part of the stock which is in the cutter or under the clamp, shows a nice clean edge and that part on the front table of the cutter next to the bevel of the knife if examined

Mr. Superintendent!

—ask your Purchasing Department to order a BOBE METER

Your front office wants the best possible results from your department. A Bobe-Meter will help make accurate plates and uniform, clean reproductions. That's why you as foundry superintendent or as pressroom superintendent should ask your purchasing department to order a Bobe-Meter.

This instrument shows in thousandths of an inch any curved printing plate defects such as distortions, concavities, or high spots. Once you have determined these troubles with a plate it is, of course, up to the foundry or the pressroom to take the necessary steps to correct the plate.

The cost of a Bobe-Meter is small compared with the savings in time and trouble in the foundry and pressroom. Send for complete information and a list of prominent users, or better still ask your purchasing department to order one of these instruments for you today. Price is $34.50; less 5% —10 days; 30 days net. Send your order to . . .

Bobe-Meter Manufacturing Co.

1846 Standard Bank Building · Cleveland, Ohio

Patent Applied For

Here is How You Can Keep Metal Costs Down in 1932

WHEN the type metal cost figures for 1931 are completed then is the time to take up this question of lower yearly metal costs. You can show the "powers-that-be" that by Imperializing your plant you can lower type metal costs. Tell them that Imperial Type Metal regularly analyzed and kept in A-1 condition at all times by the Plus Plan will lower metal costs by reducing the dross, by saving fuel consumption, minimizing machine and metal troubles and will produce sharper and cleaner plates with better impressions, etc. Don't wait until the middle of the year but take up this yearly type metal cost at the time when 1931 figures are fresh in everyone's mind. Hundreds of newspapers who have Imperialized will tell you why it pays to—

stick to

Imperial METAL

THE IMPERIAL TYPE METAL CO.

Philadelphia . Los Angeles . New York . Chicago

carefully will show considerable fuzz or coating particles, and this condition is true, even though the cutter be in excellent shape and the knife freshly ground, for the reason that the bevel on the knife has a tendency to crush the edge of the stock. It seems to me it would be a simple matter to take, say an eighth of an inch trim off the part referred to. I know this would require a little more work on the cutter but in the long run it would save considerable time in the pressroom since the little particles fly about and get on the form and give the appearance of picking or dirt on the form.

To prove this to your cutting operator's entire satisfaction, have him take a small quantity of news board or strawboard and cut it and compare those pieces under the clamp with those on the outside of the clamp on the bevel side of the knife and he will see in an exaggerated fashion just what happens when any paper is cut.

Makes Plea for Craftsmen

Continued from page 13

overhead?" "Oh, light, rent, some taxes and new machines once in a while. It doesn't amount to anything at all."

I am glad to say this attitude is disappearing, because the employee is commencing to realize that the so-called, deprecated overhead is one of the most important things; like interest, it works twenty-four hours a day. If operated eight hours per day, the machines under your jurisdiction would only be 33 1 3⁄4 efficient, because heat, light, taxes and all those other things go on twenty-four hours a day.

An apprentice in a modern shop—and I dare say this is true in many places—is brought in with the understanding that he is going to work at a fixed, graduated scale over a four-year period. At the end of that time it is presupposed he will be a two-thirder. I wonder how many become two-thirders?

We have had the experience in our organization where a boy will put in four years of time and enter his two-thirdship or his journeymanship, and he is sadly, woefully made up and not able to take on the grade. The result is what? The result is we carry him as long as we can. That isn't true only of my organization, it is true of others. They carry him as long as they can. Slack season comes and he is laid off. He isn't put back and he holds a grudge against the employer and against the industry and he cannot get another job.

Right there is the time when the communist steps in and causes trouble. Whose fault is it? The individual's? No. *The fault lies with the individual employer and the men whom he puts in his various departments to educate these apprentices.*

New Ludlow Face

The newest addition to the selection of typefaces available in matrix form for the Ludlow is Tempo Bold Condensed which is available in sizes from 18 to 48 point. This series

TEMPO BOLD CONDENSED IS USEFUL
In headings of strength in limited space

constitutes one more addition to the Tempo family, being a compressed version of Tempo Bold.

There is a marked trend in advertising typography toward the use of condensed faces. Tempo Bold Condensed will meet this demand.

Letters to the Editor

New York, N. Y., Oct. 23, 1931.

Printing Equipment Engineer,
Cleveland, Ohio.

Dear Sir:

Color printing on daily editions of newspapers, can hardly be considered an innovation as we printed two (and were equipped to print three) colors on daily editions of the New York *Journal* as early as 1898.

This work was done at the full speed of the presses, which at that time was around 24,000 papers per hour. We used stereotype plates on three cylinders added to our sextuples. No close register was attempted owing to distortion of the stereotype mats. There was no "float" of register in the press as the space between the color cylinders was less than three feet.

The present demand for color on standard unit types of presses presents some problems. The run of the web from one unit to another may be as much as 16 feet and there is bound to be fluctuation in register.

Six units, or a double sextuple press, would be necessary to add two color designs to a 40-page black product. The web carrying the color must be slit to accomplish this.

Papers with small circulation may clean out black fountains and put in partitions to separate the color from the black ink. On plants having no idle time portable fountains may be used. We have made runs on one press with the Neilson portable fountain and get practical results up to a speed of 32,000 per hour. With further experiments we may attain our full speed of 45,000.

R. Hoe & Company are making for us a spray-feed fountain having two separate ink boxes and pumps feeding through separate ducts in their rail, which promises the simplest method of changing from black to color on this type of press.

Plants using equipment to full capacity on peak black product must add press units to put color on such editions, because each color on two companion pages kills half of a standard unit. Another alternative is to add color cylinders to as many black units as it is desired to equip for color.

Whatever method is used it will increase waste and probably will cut down production whenever color runs are attempted.

Small plants having much idle time can plate color units, clean fountains and register plates without overtime. Duallyoperated plants like the New York *Journal* and *American*, which are run almost continuously with much overtime on regular editions, will be handicapped by overtime for the preparatory color work.

I believe it is a passing fad and that the first advertisers are the only ones that will get an advantage warranting the added cost and that when many rush to this expensive method none will stand out prominently and they will soon drop back to black.

When the first Neon advertising sign appeared everybody was attracted by its novelty. Now one walks up Broadway, where there are hundreds of these signs, without paying attention to them.

Magazine printing in four colors and process work may enable an advertiser to use color to illustrate perfectly the tone values of his wares, like carpets, dress goods, lacquers and other products where color is the main feature. It will be a long time before such color reproduction can be attained on daily newspapers. Having been in this game for over forty years I do not expect to live to see it. There is much grief ahead for those who tackle the job.

GEO. E. PANCOAST, *Mech. Supt.*,
The Hearst Publications.

Talks to Printing Teachers

The November meeting of the Printing Teachers' Guild of New York, held at the School for Printing Apprentices, November 20, was addressed by Frank T. Denman, advertising counsel for the Mergenthaler Linotype Company.

Mr. Denman spoke of the rapid changes in printing processes, techniques and equipment that are taking place at present, and of the difficulty of adapting printing instruction to the changed conditions that present-day students will have to meet. He also urged the importance of an adequate research program in the industry to provide a broad background of basic information.

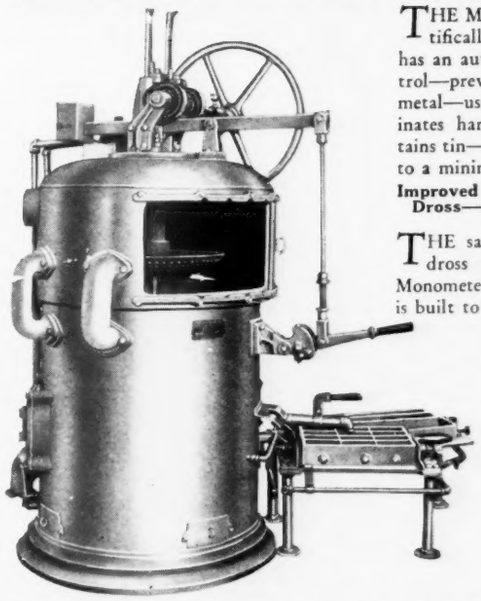
LINOTYPE REPAIR and SUPPLY

Spacebands, regular and Thick	$ .70	Molds rebuilt, regular	$20.00
Liners, Linotype and Intertype regular	1.25	Motor Fiber Pinions, all makes	1.50
Knife Wiper Bars, Linotype and Intertype	2.75	Matrix Earfiling Tool	3.00
Patent Knife Wiper	12.00	Star Wheels, per dozen	1.00
Molds, regular	65.00	Liner Cutting Gauge for Linotype-Intertype	18.00
Linotype Magazine, New	125.00	2 Model 8 Linotypes, rebuilt, for sale.	

Linotype Repair & Supply Co.
191 Canal St. Phone: Canal 6-7551 New York City, N. Y.

MONOTYPE PARTS REBUILT
and
New Monotype Accessories
Prompt Service—Less Expensive—All Work Guaranteed
(*Customers Everywhere—Send for Price List*)
NEWTON MACHINE CO.
211 High Avenue Cleveland, Ohio

Every Newspaper Plant
can profitably install
Monarch Monometer
RE-MELTING FURNACE Operated with Electricity Gas or Oil



THE Monometer is scientifically constructed. It has an automatic heat control—prevents burning of metal—uses less gas—eliminates harmful fumes—retains tin—and reduces dross to a minimum.

Improved Metal—Reduced Dross—Saving in Fuel

THE saving in fuel and dross will pay cost of Monometer in one year. It is built to last a lifetime.

Write for Catalog P. E. E.

The Monarch Engineering & Mfg. Co.
701-702 American Bldg., Baltimore, Md., U. S. A.
Works, Curtis Bay, Md.

CLEANING MATRICES
SCIENTIFICALLY

CLEANALL does it . . . without harm to the mats . . . . only a few minutes for a font.

Numerous re-orders over a long period of time received from satisfied customers.

It not only removes dirt, graphite, grease, etc.,—restores the original lustre of the brass, but in addition makes it tarnish-proof for some time.

A FREE Sample and Descriptive Circular Sent on Request.

LINOTYPE PARTS CORPORATION
270 Lafayette Street, New York City — 314 West 10th Street, Kansas City, Mo.

In answering these advertisements say you saw them advertised in PRINTING EQUIPMENT ENGINEER.

KEEP INFORMED
For an impartial analysis or physical examination

Send your [TYPE METAL, PAPER, INKS, GLUES, Etc.] *periodically to*

Mariner & Hoskins, Inc.
222 West Adams Street, Chicago, Ill.
Chemists for the Printing Industry

Don't forget! Mention PRINTING EQUIPMENT ENGINEER *when answering these advertisements.*

Linotype and Intertype Repair Service

Molds—side knives—back knives—1st elev. back jaws—spacebands—dist. box bars—2nd elev. bars—magazines—motors—dist. screws made like new—driving shafts bushed—general repairing of parts. Also make special Linotype and Intertype tools—Matrix ear file gauge $2.50—magazine expander $4.50—magazine broach $4.50—liner cutting gauge $25.00—fiber motor pinions for all makes of motors and special pinions made to order.

William Reid & Co. 537 S. La Salle St. Chicago • Illinois

Manufacturers want to know where you saw their advertisements—tell them PRINTING EQUIPMENT ENGINEER.

$5.00 Buys This New

Improved Matrix Cleaner

—that automatically cleans and keeps reference side of mats bright and shiny. Works as type is set. Easy to attach to all makes and models.

USED BY

F. J. Heer Printing Co., Columbus, O.; Lima, O., Daily News; Standard Register Co., Dayton, O.; Dayton, O., Daily News; Central Trade Plant, Grand Rapids, Mich.; Saginaw Daily News Yeager Typesetting Co., Columbus, O.; Journal Publishing Company, Meridian, Conn.

PROBERT TYPESETTING CO.
211 S. Ludlow Street, Dayton, Ohio

Advertising in PRINTING EQUIPMENT ENGINEER *keeps you informed on new and improved equipment for the printing industry.*

Vogue Optional Characters

The above characters can now be had as a part of any order for Intertype Vogue in addition to the regular characters of this popular face.

JMQWY aegijrtu

These characters are being made in both the Light and Bold Vogue in all sizes.

The addition of these characters to the Intertype Vogue face makes it possible to satisfy the many preferences which now obtain among users of sans serif faces.

New Catalogs, Books and Bulletins

Readers of PRINTING EQUIPMENT ENGINEER who are interested in securing any of the catalogs, books or bulletins listed below can do so by checking the literature desired. Mark carefully only that literature which you wish to receive. Fill out the coupon and send it to us. The literature will be forwarded without cost.

Star Parts and Accessories—Four-page folder, illustrated, describing parts furnished by the Linotype Parts Corporation for application to linotypes and intertypes.

Christmas Borders and Ornaments—A four-page folder by the Ludlow Typograph Co., showing the matrices available for use on the Ludlow for casting decorative materials.

Newspaper Foundry Practice with Certified Dry Mats—This booklet contains data on the use and handling of Certified dry mats based on contacts over an 8-year period with hundreds of plants over the country.

A Short History of Stereotyping—A book of 96 pages containing illustrations of stereotyping in its various stages, free to those interested as long as the supply lasts.

We Have Grown Quite a Bit—A four-page deckle-edge folder by the Ludlow Typograph Co., showing how the Ludlow has been instrumental in helping one printing plant.

A Claim to Precision—A broadside issued by The Printing Machinery Co., printed on white paper in red and black ink (illustrated) describing the precision tools employed in the manufacture of metal base and register hook systems, aluminum alloy metal furniture and aluminum die furniture.

Monotype Parts—A pamphlet by the Newton Machine Co., specialists in the sale and rebuilding of monotype accessories.

Cut Costs—An illustrated folder describing the Automatic Ejector Set safety mechanism for application to Linotype Machines.

Printing Equipment Engineer,
1370 Ontario St., Cleveland, Ohio.
Gentlemen:

Please send the literature checked above without obligation.

Name of Company _____

Attention of _____

Address _____

City _____ State _____

THE quality of the type produced by your machines is controlled directly by the quality of the metal in the machine pot.

Use Blatchford Metal « the product with a reputation for unquestioned quality backed by 75 years of metal mixing experience.

Don't neglect your metal. « Keep it in perfect working condition at all times. » Let us help you do this « use our laboratory service. « We will gladly make a chemical analysis of samples submitted by any printer or publisher and render a complete and impartial report.

GOOD METAL IS ALWAYS MORE ECONOMICAL

E. W. BLATCHFORD COMPANY

blatchford

LINO - MONO - INTER - LUDLOW - TYPE CASTER - STEREOTYPE

METALS

63 Park Row, New York City

E. W. BLATCHFORD COMPANY — REPUTATION — EST'B. 1854 INCO. 1890 — A TOWER of STRENGTH.

608 So. Dearborn St., Chicago

THE LUDLOW SYSTEM OF SLUGLINE COMPOSITION

CONSIDER

for just a moment, the rightness of the Ludlow principle in providing for the job and display type requirements of the composing room.

The composing room must always have type supply in one form or another. Yet how much of each of any face and point size it will require, you cannot possibly forecast.

If you purchase type, three fonts of one size may lie untouched indefinitely. Yet a hundred fonts of another size may fall short of satisfying an unexpected demand.

If you make your own type, you must tie up large quantities of metal and labor against possible future demands that you cannot hope accurately to forecast. And despite the most careful planning, you are almost sure to run short when the rush and need are greatest.

The answer to the problem of type supply, for job and display composition, is not to attempt to lay in and maintain an adequate supply of pre-cast single types, but to equip with fonts of matrices, casting line after line in slug form directly from the copy, set and spaced in matrices.

The Ludlow carries through the whole size range of job and display composition this principle of casting direct from lines of composed matrices whatever lines make up your copy—and no more—and this without sacrificing the simplicity so essential in both operation and mechanism to the economical production of size and style variety.

Depend on the infallible adequacy of matrices—the simplicity of slugs with the simplest of mechanisms. Give your composing room the advantage of Ludlow operating economies now!

If you are not yet fully familiar with the Ludlow System and the operating economies it will effect for you each week, let us—without obligation—send you full information regarding it.

LUDLOW TYPOGRAPH COMPANY

2032 Clybourn Avenue, Chicago

THIS ADVERTISEMENT SET IN LUDLOW KARNAK MEDIUM